

Appl. No. 10/791,855
Reply to FINAL Office Action of July 22, 2005
Amendt. dated September 28, 2005
Atty. Docket No. AP973US

Amendments to the Abstract

Please replace the Abstract with the following amended Abstract:

-- A Schottky barrier photodetector comprises a waveguide structure formed by a thin strip of material having a relatively high free charge carrier density, for example a conductor or certain classes of highly-doped semiconductor, surrounded by material having a relatively low free charge carrier density, the material on at least one side of the strip comprising a semiconductor, the strip having finite width and thickness with dimensions such that optical radiation couples to the strip and propagates along the length of the strip as a plasmon-polariton wave, light for detection being coupled to one end of the strip to propagate along the strip as said plasmon-polariton wave, ohmic contact means applied to the semiconductor material and at least one electrode means connected to the strip for applying bias to the Schottky barrier and extracting a photodetector current corresponding to the light applied to the photodetector. Where the strip of material is a flat, thin strip, the device will be polarisation dependent. Substantially polarisation-independent operation may be achieved by using a strip whose width is of the same order of magnitude as its thickness. --